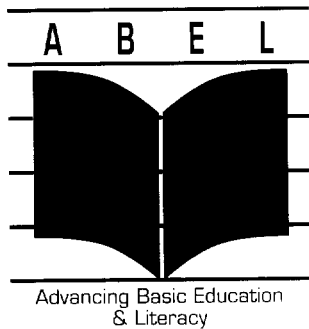


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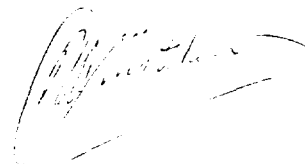
ESTABLISHMENT OF A PRIMARY PUPIL REGISTRATION SYSTEM

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June 18, 1992

PN-ABQ-876

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GIRL'S ATTAINMENT IN BASIC LITERACY AND EDUCATION (GABLE)

Agreement No. 612-7-605, Program No. 612-0240

MINISTRY OF EDUCATION AND CULTURE

ESTABLISHMENT OF A PRIMARY PUPIL REGISTRATION SYSTEM

18 June, 1992

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1. PREAMBLE

The Plan of Operation, submitted herein, is pursuant to Section 4.1 (e) of the Program Grant Agreement for Girls Attainment in Basic Literacy and Education between the Government of Malawi and USAID. This condition reads:

"The Grantee shall furnish to A.I.D.:

- (e) evidence that the Grantee has adopted a plan satisfactory to A.I.D. to register all primary pupils for the purpose of implementing a reduction in the repetition rates throughout the primary school system over the life of the Program. (The plan will contain annual targets for registration and reduced repetition.)" p. xiv, Girls' Attainment in Basic Literacy and Education (GABLE), Vol. 1, Sept. 1991.

The four years of the program are 1992-93 to 1995-96.

2. AIMS AND GOALS

The "overall objective" of Girl's Attainment in Basic Literacy and Education (GABLE) "is to increase girls' attainment (defined as access, persistence and completion) in primary education" (Executive Summary 1991, page 1). To achieve this objective the Ministry of Education and Culture (MOEC) will develop and establish a Primary Pupil Registration System (PPRS) in Malawi. The proposed system will enable MOEC Headquarters, regional and district education administrations to monitor and develop policy on girls' access, persistence and completion in all of the primary standards. The PPRS will provide Government officials with higher quality information than is now produced by the Ministry and will be made available in a shorter amount of time. MOEC is contracting with the Malawi National Examination Board (MANEB) to complete various phases of the operation. It should be noted in this connection that MOEC owns the registration data and such data can be released only with the express permission of MOEC.

3. OVERVIEW

The Government of Malawi, through MOEC and MANEB seeks to register all pupils in the primary school system. Internal MOEC figures indicate that the number of Standard 1 to 8 primary pupils is 1.56 million. The following plan proposes many changes in the way teachers and schools report their pupils' status and progress. The plan proposes policy changes in the way registration is now conducted and proposes targets for the reduction of repetition (see condition (f), page xv, GABLE Program Assistance Approval Document, Vol 1). The plan also estimates the costs associated with the program.

In the past MOEC has collaborated with MANEB to register primary standard pupils. MANEB has the computing capacity and a distribution network to all primary schools in Malawi. MOEC wishes, through working with MANEB, to develop the appropriate capability of its own to implement and manage PPRS in the future.

4. GOALS OF REGISTRATION

The MOEC has outlined the following purposes of Primary Pupil Registration in Malawi:

- a. determination of an applicant pool for Form 1, reinforcing the new selection policy;
- b. monitor repetition in all classes;
- c. monitor drop-outs in all classes;
- d. monitor girls' progress compared to boys' progress in the primary system;
- e. assess retention capacity between the two genders;
- f. monitor pupil migration (transfer) between schools, between and within districts, between and within regions;
- g. monitor ages of new entrants;
- h. monitor pupil performance between districts and regions;
- i. compare pupil performance and system characteristics with other countries; and
- j. review existing policies and formulate new ones.

An immediate goal of PPRS is to determine the incidence of repetition in Standards 1 through 8. The focus on repeaters is important because they cost the Government of Malawi enormous resources. Thus, if (a) there are 1,560,000 pupils in primary schools, (b) an average of 25 percent of all pupils repeat during a given year, and (c) the general cost of educating one pupil averages 100 Kwacha per year, then the extra resources devoted to educate the repeaters alone is estimated to be 39 million Kwacha annually. The goals, then, are (1) to register all pupils in all primary schools in Malawi, and (2) to use PPRS to monitor pupils and to formulate policy about repetition.

It is recognized that while all (or nearly all) pupils will be registered, there will be incomplete registrations (e.g., no knowledge of date of birth) and errors in the registration (e.g., incorrect date of birth given and data entry mistakes). The following, then, are the expected targets for registration by school year:

Primary Pupil Registration System
Yearly Targets

School Year	Percent Registered	% Incomplete Registrations and Error Rates
Year 92/93	100%	20%
Year 93/94	100%	15%
Year 94/95	100%	10%
Year 95/96	100%	5%

A condition specified in the GABLE Project is for the Government of Malawi to reduce repetition in all standards. However, this cannot be done until the number and distribution by standard of repeaters is known and until further policies about repetition are formulated and implemented (See Appendix I).

In spite of these difficulties, at the end of the Project Term (1995/96) repetition rates will have been reduced by 25 percent in each standard using the school year 1988/89 as a base year.

5. SCOPE OF REGISTRATION

MOEC proposes that all pupils in all schools, assisted and unassisted, be registered under this plan. However, the approximately 300,000 refugee pupils in UNHCR programs will not be. Refugee children who are currently in the Malawi school system will be registered (see the codes for District of Origin, Section 7.a.1 below).

6. WHAT IS REGISTRATION

A primary school pupil is registered when key data about the individual is recorded into a central computer and a unique identification number is assigned to the pupil. For each pupil, registration is a once only event.

Registration is an administrative function carried out by the central headquarters at MOEC and indicates the status of individual pupils in the system. It is important to understand (1) how pupil status is affected by conditions in the school system (Appendix II) and (2) to define how the proposed registration works (see Appendix III).

MOEC proposes to modify the current incomplete PPRS so that it provides the types and quality of information required for policy formulation and system management. Because registration will be an administrative procedure used in the primary school system, teachers and school heads will need to know the new definitions, rules and procedures. Provision and costs for training will be outlined below. The proposed definitions for pupil data are described below.

7. PUPIL DATA

The data from Registration will go into a database. Some data about a pupil will be fixed and other data will vary over time as it is updated.

7.a Fixed Data Elements

7.a.1 Pupil Registration Number.

In October/November, 1991 MANEB conducted the first registration of Standards 6, 7 and 8 using a composite of numbers which stand for Region/District/school identification number/class/year of current registration/class serial number, e.g. 03/24/0132/6/92/136. While this suits MANEB for the registration of Standard 8 pupils who take the PSLCE, MOEC requires a different numbering system to register all pupils. MANEB agrees that their system needs to change so that it corresponds with a system that includes all pupils.

MOEC proposes to introduce an Identification Number that consists of 11 digits designed to be unique for each pupil. (See Appendix IV for alternative approaches to forming the Registration Number). The proposed number, Alternative 4 in Appendix IV, is composed of the following five parts:

Year of Birth:	e.g. 84
Month of Birth:	e.g. 12
District of Origin:	i.e., codes for all districts in the country, 01 to 28, plus codes for pupils born in Tanzania, Zambia and Mozambique and citizens from other states. These latter pupils will be recorded as 96, 97, 98, and 99 respectively.
Gender:	i.e. 1 = boy, 2 = girl
Computer Generated Number	e.g. 0001, to cover those pupils who have the first seven digits in common.

Such a number would look thus, 84 12 08 2 0001, i.e. the pupil was born in December 1984, is from district No. 8, is a girl, and is the first pupil with the same first seven digit sequence.

This assures a unique registration number for every pupil. Unique numbers permit pupil data in future registrations to match his or her record already in the database. The number can be sorted by its various components.

7.a.2 Surname and other names.

Children's names are changed from time to time. However, it is essential for Registration that names do not change. Therefore, MOEC proposes that parents choose a name for their children which will be used for the duration of the child's schooling. This name will not change and will be inscribed on certificates, examinations and other education-related documents.

7.a.3 Year of Initial Enrolment in the school system.

This figure will serve to monitor the pupil's progress in the school system and will be used as part of the statistics for checking repetition.

7.a.4 Disability.

A classification will be drawn up with the assistance of MACOHA.

7.b Variable Data Elements

7.b.1 School Identification Number.

Pupils enroll in schools located in a geographical setting and the school itself is an important variable in the education process. MOEC proposes to give a unique identification number to every school. With the School Identification number the region and district are identified as an actual place through a look-up table in the database and data can be analyzed on a geographical basis, e.g., districts and regions.

7.b.2 School Management.

Within the Government policy of encouraging private organizations and religious missions to establish schools, MOEC proposes to designate schools by their type of management. Once the specific management designations are determined by MOEC, they will be coded and included in the database.

7.b.3 Current Standard of the pupil.

This will be indicated by a whole number between 1 and 8.

7.b.4 Pupil Status.

The registration procedure determines two types of status for each pupil: Movement Status and Promotion Status. Teachers establish and/or update these two types of pupil status at the beginning of each school year (the procedures for this are explained in Appendix III). The following codes are meant to track important information about the pupil, his or her progress through the Standards and whether pupils transfer from one school to another:

7.b.4.1 Movement Status.

The following codes will be used to indicate pupils' continuation and movement to and from schools.

N = New Entrants, i.e. not yet registered in PPRS but usually Standard 1 pupils. These could also be pupils entering into standards who migrate from other countries and who need to be registered for the first time in Malawi.

E = Was enrolled in this school last year.

- I = Transfer In. These pupils document enrolment at their new school with a Transfer Letter.
- O = Transfer Out. These pupils have documented their movement out of the school with a Transfer Letter.
- D = Drop out. These pupils are known to have dropped out or are those for whom no other status can be determined.

7.b.4.2 Promotion Status.

The following codes will be used to indicate promotion status within a school or, because the students have gone, lack of such a status.

- N = New Entrants, i.e. not yet registered in PPRS but usually Standard 1 pupils. These could also be pupils entering into standards who migrate from other countries and who need to be registered for the first time in Malawi.
- P = Promoted pupils.
- R = Repeat. These pupils are repeating their current Standard,
- O = Transfer Out. These pupils have documented their movement out of the school with a Transfer Letter,
- D = Drop out. These pupils are known to have dropped out or are those for whom no other status can be determined.

8. THE GENERAL REGISTRATION PROCEDURE

The PPRS takes place on two different levels: (1) initial registration into the system, usually in Standard 1, done by the head teachers and Standard 1 teachers in communication with the parents, and (2) updated registration of variable pupil data for Standards 2 through 8 done by the class teacher on the basis of lists forwarded by MOEC/MANEB. It should be noted that there will be a few New Entrants in Standards 2 through 8. Appendix III provides a more complete description of the Registration processes.

9. TIMING OF 1992-93 REGISTRATION

Initially registration for existing pupils in Standards 1 through 6 was to take place in June and July of 1992. However, it became evident that:

- (a) there was not enough time between early May and June/July, 1992 to design the registration instruments and to recruit, train and deploy the registration teams that go into the districts;
- (b) during June and July, 1992 MANEB administers the PSLCE to graduating Standard 8 pupils and is otherwise occupied;

- (c) the timing of Registration is important because pupil enrolments in schools and status will differ depending on the time of registration. Thus, registering pupils in the very first weeks of school, before fees are paid, could over-represent the eventual number of Standard 1 pupils. On the other hand, registering pupils fees in Term 2 will yield fewer pupils as the dropouts from Term 1 will not be recorded (for fuller details on the conditions affecting pupil status, see Appendix III);
- (d) the need to collect data early is important so that useful information can be disseminated back to the teachers, school heads, districts and regions early (preferably in Term 2).

Therefore, MOEC proposes to carry out PPRS beginning in the third week of October 1992 when it is known that MANEB is in a slack period, when schools are most accessible and when Standard 1 enrolments are certain. Further, a registration in October/November will catch the maximum number of pupils at that period when it is believed that the greatest number of children will be at school. The result of this will be that registration in the subsequent year will catch children who either drop out during that year or return in the next year as repeating pupils.

Carrying out Registration in the school year 1992-93 means that (1) all pupils will be registered for the first time, and (2) planning the necessary details, e.g., registration format and operational agreements between MOEC and MANEB, can be effected before Registration begins.

10. 1992-93 REGISTRATION PROCEDURE

In contrast to the General Registration procedure (see Section 8 above) which will operate for the 1993-94 and subsequent school years, national registration in October/November 1992 will be as follows:

- 1) Standard 1 pupils will register with school heads, with assistance from Standard 1 teachers and parents (this will be the process in subsequent registrations); and
- 2) Standard 2-8 pupils will register for the first time with the class teachers.

1. REGISTRATION AND OTHER DATA

One consequence of PPRS for teachers and school heads is that they will not have to fill in Tables I, II and III of the Primary School Annual Statistical Return. The data from Registration will be processed to provide the same information. The Primary School Annual Statistical Return will, thus, have to be modified to reflect the data collected through the registration procedure.

12. PPRS IMPLEMENTATION PLAN

The implementation of PPRS requires 3 broad tasks to be accomplished during the period June 1992 to 31 March, 1993:

- (a) Defining and agreeing on the data elements from the present to August 1992;
- (b) Collecting the data from pupils in October/November 1992; and
- (c) Processing the data into useful information to be disseminated from November 1992 to June 1993.

(For details of the process, see Appendix V).

13. ESTIMATED COSTS OF THE REGISTRATION PLAN

There are two ways by which the PPRS can be carried out. In the first way, Alternative I, data entry is done manually, while in Alternative II, an Optical Mark Reader is used to enter data. The comparative costs are given below.

	1992-93	1993-94	1994-95	1995-96	TOTAL
Alternative I	559,496	141,267	147,696	150,064	980,062
Alternative II	582,982	154,529	161,106	163,436	1,043,591

(For details of the costs, see Appendix VI).

14. EVALUATION OF THE PLAN

PPRS will be monitored and evaluated: (1) to ascertain that plans for its initial implementation are being realized in a timely manner; (2) by ascertaining through DEOs offices that registration has occurred in all districts and schools in 1992/93; (3) by examining the accuracy of the data entry process; (4) by evaluation of the quality of data on student and system characteristics that is generated through the registration data base.

15. MODIFICATIONS TO THE PLAN

Prior notification to USAID/Malawi will be given and prior approval from USAID/Malawi will be sought should the MOEC consider that any substantive modifications or alterations to the plan are needed. It is recognized that minor changes not affecting the conditions of agreement in Section 4.1 (e) of the G.A.B.L.E. Program Grant Agreement may be necessitated in the process of implementation.

Appendix I. THE REDUCTION OF REPETITION

One of the primary objectives of the GABLE program is the improvement of internal efficiency in the primary school system. An important component of this objective is the reduction of repetition rates. High repetition reduces the resources the system is able to spend on each pupil, decreases the contact time that pupils have with teachers, and prevents new students from entering the system. Thus, the GABLE agreement has established a target of 25% reduction in repetition rates over the life of the program.

This target is to be realized with three broad strategies:

- (1) Establishment of a Primary Pupil Registration System (PPRS) to enable the Ministry to monitor repetition;
- (2) Formulation of policies aimed at reducing primary repetition; and
- (3) Development of a process for monitoring repetition and revision of repetition policies.

1. PRIMARY PUPIL REGISTRATION SYSTEM (PPRS)

Reliable information on the incidence and distribution of repetition is essential to realizing reductions in repetition.

Successful implementation of the PPRS should provide the Ministry with accurate statistical information on the flow of students through the primary system, thus enabling the Ministry to:

- (a) establish a reliable set of baseline data, at different levels of aggregation: school, district, regional and national;
- (b) develop policies aimed at reducing repetition, in accordance with the distribution of repetition and its relation to other measures of educational attainment;
- (c) monitor the effectiveness of such policies; and
- (d) revise policies in line with their effectiveness in reducing repetition rates and their consequences in terms of student enrollment and dropout.

As discussed, the Primary Pupil Registration system will be inaugurated in October-November 1992. In 1993, when results of the initial registration are available, the Ministry will develop baseline estimates of enrollment.

2. REPETITION POLICIES

As the PPRS is being implemented, the Ministry will develop policies aimed at reducing the rates of repetition in primary school. Careful design of repetition policy is important in view of the following:

- (a) Repetition is only partially under the control of MOEC. Repetition results from a series of decisions made at the local level by teachers, parents, and pupils on the basis of a complex, variable and poorly understood calculus of direct and opportunity costs, perceived benefits of educational participation, cultural factors, and the like. For example, parents may decide that educating boys is more worthwhile than educating girls. In such a context, if the Ministry establishes strong repetition policies to discourage repetition, parents may decide to withdraw from school their daughters rather than encourage them to attain more schooling. Such decisions can be influenced but not controlled by Ministry officials.
- (b) The causes and incidence of repetition are likely to vary across and within districts, standards, genders, and sub-groups within the population. Policies effective for reducing repetition for one group may not be effective with other groups.
- (c) There is little research about the effectiveness and consequences of repetition policies, in general, and in the Malawian context, in particular.
- (d) Repetition is related to enrollment and dropout. An inappropriately zealous program of repetition reduction may have negative consequences in terms of other aspects of educational attainment.
- (e) Most importantly, in order to be effective, repetition policies require a broad consensus within the Government, the Ministry and its components, and the community.

Thus, the Ministry plans to approach reduction of repetition through an iterative process of consensus-building, formulation and implementation of repetition policies, monitoring of repetition rates, and revision of policies aimed at reducing repetition. In order to develop such policies, the Ministry will have a committee look into and make recommendations on repetition policies appropriate for the Malawian context in terms of both effectiveness in reducing repetition and feasibility.

Repetition policy will likely comprise a set of specific measures. The following specific measures will be considered for possible inclusion in a repetition reduction policy package:

- (1) Enforcement of a minimum age of entrance into primary school
- (2) Enforcement of a maximum age of entrance into primary school
- (3) Enforcement of a maximum age of entrance into secondary school
- (4) Expansion of cheaper, less formal options for acquiring basic education, these options being linked to the formal school system
- (5) Limitations on the number of years a student can repeat
- (6) Establishment of national criteria for repetition; Charge parents for students who repeat despite have met the criteria for promotion

- (7) Establishment of requirements that Standard 8 students who have passed the PSLE continue any studies preparing for secondary school privately
- (8) Establishment of multigrade classrooms for under-enrolled standards; Increase teacher-pupil ratios in other standards
- (9) Development of non-graded, competency-based curricula
- (10) Establishment of automatic promotion in some or all standards
- (11) Provision of more teachers (and other resources) to schools with higher/lower repetition
- (12) Provision of scholarships to non-repeating students (or groups such as girls)
- (13) Provision of incentives to schools with low repetition rates

The policy development process will be completed by March 1993, so that policies can be implemented at the start of the 1993-94 school year.

3. MEASUREMENT OF REPETITION

Progress in the reduction of repetition can be measured in two ways, each measuring a slightly different aspect of student flow and each with different data requirements.

3.1 Repeaters as a Proportion of Current Enrolment.

This is the method reported in Table 25 of the MOEC's annual Education Statistics. Repetition is calculated as the number of repeaters as a proportion of current enrolment, according to the following formula:

$$\begin{array}{lcl} \text{Repeaters as a} & & \text{Number of Repeaters (t)} \\ \text{Proportion of} & = & \text{-----} \\ \text{Current Enrolment} & & \text{Enrolment (t)} \end{array}$$

where t = year

3.2 Repetition Rate.

A technically more accurate method of describing repetition is to calculate the number of students repeating in a given year as a proportion of the number of students enrolled the previous year, as follows:

$$\begin{array}{lcl} \text{Repetition Rate (t) =} & & \text{Number of Repeaters (t)} \\ & = & \text{-----} \\ & & \text{Enrollment (t-1)} \end{array}$$

where t = year

In an educational system where enrolment is growing as in Malawi, repetition rates will be higher than repetition calculated as a proportion of current enrolment.

It will be possible to monitor reductions in repetition with PPRS data (using either method of calculation) in the 1993-94 school year. In the meantime, existing MOEC data must be used to establish baseline and target figures, as shown in Table I-1. However, we do not know how comparable PPRS data, calculated at the individual level, will be with existing data, calculated at the regional level. Thus, these initial targets will be revised when PPRS data statistics become available. Initial targets are set low to allow time for the Ministry's repetition policies to take effect.

4. TIMETABLE

To meet the requirements of the PAAD, MOEC has established the following plan of action:

1. Year 1, 1991-92

1.1 Preparation for PPRS

1.2 Policy

Study of repetition and policy options for the reduction of repetition

Begin process of developing repetition policies

1.3 Monitoring

Development of initial targets for the reduction of repetition rates (based on 1989-90 MOEC data)

Development of repetition monitoring process

2. Year 2, 1992-93

2.1 Implementation of PPRS

2.2 Policy

When PPRS data is available, formulation of repetition policies and implementation schedule

2.3 Monitoring

Re-interpretation of baseline data and targets, in light of data generated by PPRS

3. Year 3, 1993-94

3.1 Year 2 of PPRS

- 3.2 Policy
Implementation of new repetition policies
- 3.3 Monitoring
Calculation of indicators of student flow

Revision of targets for the reduction of repetition using PPRS data
4. Year 4, 1994-95
- 4.1 Year 3 of PPRS
- 4.2 Monitoring
Examination of changes in indicators of student flow, 1992-93 to 1993-94, by area, standard, gender

Investigation of areas with especially high and low reductions in repetition, as sources of information on revision of repetition policies. (Refer to "Special Studies" in the Monitoring and Evaluation Plan.)

With the new PPRS data, preliminary examination of effects of initial policies:
- * Form 8 policies on repetition in Standard 8
 - * Minimum age restrictions on repetition in Standard 1
 - * Abolition of tuition requirements for early standards
- 4.3 Realization of Year 4 Repetition Reduction Targets
5. Year 5, 1995-96
- 5.1 Year 4 of PPRS
- 5.2 Monitoring
Examination of effectiveness of repetition policies implemented in 1993-94
- 5.3 Policy
Review of repetition policies
- 5.4 Realization of Year 5 repetition reduction targets

Table I-1. Tentative Targets for the Reduction of Repetition*

Calculated from MOEC 1988-89 data**		Target Repetition Rates	
Repetition Rates		1994-95 (-10%)	1995-96 (-25%)
STANDARD 1	25.9%	23.3%	19.5%
STANDARD 2	22.5%	20.3%	16.9%
STANDARD 3	20.1%	18.1%	15.1%
STANDARD 4	16.0%	14.4%	12.0%
STANDARD 5	16.3%	14.7%	12.2%
STANDARD 6	16.6%	15.0%	12.5%
STANDARD 7	18.3%	16.5%	13.8%
STANDARD 8	47.4%	42.7%	35.6%

* Subject to revision on development of PPRS indicators

** Calculated using "Repetition Rate" formula with MOEC repetition data for 1988-89 and enrollment data for 1987-88, assisted schools.

Alternate Table I-1. Tentative Targets for the Reduction of Repetition*

Calculated from MOEC 1988-89 data**		Target Repetition Rates		
Repetition Rates		1993-94 (-5%)	1994-95 (-15%)	1995-96 (-25%)
STANDARD 1	25.9%	24.6%	22.0%	19.5%
STANDARD 2	22.5%	21.4%	19.2%	16.9%
STANDARD 3	20.1%	19.1%	17.1%	15.1%
STANDARD 4	16.0%	15.2%	13.6%	12.0%
STANDARD 5	16.3%	15.4%	13.8%	12.2%
STANDARD 6	16.6%	15.8%	14.1%	12.5%
STANDARD 7	18.3%	17.4%	15.6%	13.8%
STANDARD 8	47.4%	45.1%	40.3%	35.6%

* Subject to revision on development of PPRS indicators

** Calculated using "Repetition Rate" formula with MOEC repetition data for 1988-89 and enrollment data for 1987-88, assisted schools.

Appendix II. Conditions That Affect Pupil Status

This Appendix details the conditions under which pupils enter the Primary School System in Malawi and the rules that guide their passage through Standards 1 to 8. It is proposed that these conditions be used as discussion points that enable pupil status to be defined. Pupil status is determined by the conditions that exist in the current education system.

When the parents of a six year old child approach the school head about registering their child in school, the family is on the threshold of entering the Government of Malawi Primary Education system. Formal entry into the school system means that pupils and parents agree to the contractual obligations established by the Government of Malawi. The school system provides one year of instruction per standard for each pupil until the pupil reaches Standard 8. The family of the pupil agrees to pay certain fees, buy certain uniforms, if applicable, and motivate their child to attend class, perform the assigned work by the teachers and demonstrate learning for promotion into the next standard. The pupil and the school system succeed when pupils graduate from their Standard 8 class with a pass on the Primary School Leavers Certificate Examination.

Before graduation from Standard 8, however, the rules and procedures that guide pupils through the standards affect their status and, consequently, their rights and entitlement to an education. The first procedure that signals entry into the Primary School system is when parents bring their child to the school head for Standard 1 registration. The school head asks the parents for documentation on the child's age, e.g., the under 5 clinic cards. In the absence of this card the school head decides if the child can be enrolled or not. Enrolment into the school system for Standard 1 is conditioned on the child having attained his or her 6th birthday on the first day of school.

Generally, a pupil registers only once, and that is for entry into Standard 1. Registration into the school system can take place at a later age only if the pupil migrated from another country and needs to obtain legitimate status as a pupil in Malawi. This pupil will need documentation of successful completion of finished work from the former school.

When the school head is satisfied that a pupil is of the right age to begin Standard 1, he or she places the pupil's name on a temporary class list. When school begins, usually on October 1, the Standard 1 teacher works with the temporary list for two or three weeks, and checks pupil attendance. If the teacher feels that the pupil should wait a year before continuing Standard 1, then he/she informs the school head to advise the parents to wait another year before the pupil enters school. Other pupils in Standard 1 may drop out for a variety of reasons. For those pupils, registration is delayed. After two to three weeks, the temporary list becomes the permanent list, and those pupils consistently attending class become formally registered into the Malawi Primary School System.

If a pupil is registered, and then fails to attend classes for two terms, i.e., 1 October to 31 December and 3 January to 31 March, school heads and teachers consider the pupil to have dropped out. If a pupil misses two terms or more and returns only to fail the final tests for the standard, then the school head and teacher consider the pupil a repeater. If the pupil fails to attend class due to sickness for one term yet completes the final term with passing grades, then the pupil can be promoted.

Sickness is one reason why a pupil might drop out or have to repeat a grade. Another condition under which a pupil may have to repeat or drop out would be if

the family failed to pay the school fee. School fees are paid during the first term from October to the end of January. A School Fee Collector circulates among the schools to collect this fee as the school-head is not authorized to write receipts or handle money for the District Education Officer. Currently failure to pay the fee from Standard 2 through 8 means that pupils are required to drop out beginning the second term. A pupil can return to his or her class during the second term only if the fee is paid to the District Education office in person. Thus, a pupil is still registered, but his or her status has changed to a drop out. If the pupil returns to school the next year, expecting to pay the fees on time, he or she will be considered a repeater since the pupil never completed the course or passed the final exam for the standard.

While tuition fees for Standards 1 to 4 are being progressively phased out, building fees are still being imposed on pupils in these and the other standards. There may be other fees and costs to pupils and their families that may affect whether they attend school or not.

Other conditions that seem to indicate repetition are academic. Teachers may feel that some pupils have not achieved or learned enough at the end of the year to be promoted to the next Standard. In other cases, pupils themselves feel that their performance was not high enough, and thus repeat to better their position. This is particularly prevalent in Standard 8, with the attempts to qualify for a place in Form 1.

For social and or cultural reasons, girls may drop out of school for reasons of pregnancy or marriage. When girls drop out for marriage reasons, they often drop out for good, even though they have rights and privileges to 8 years of primary school education.

Pupils transfer away from their current school because their families move to new locations. These pupils obtain a "Letter of Transfer" from the school head to submit to the school head in the new location. The transfer letter allows the pupil to continue education at the new school. If the pupil misses more than an academic term in the transfer, the teacher or school head must decide if the pupil must repeat the standard. If the transfer takes place over a short time of a few weeks, there is usually no change in the pupil's status.

National statistics and common knowledge among teachers and school system observers concur that pupils tend to repeat in the early standards and in Standard 8. Female pupils tend to drop out when they reach marriagable age. High repetition in Standard 1 may result from parents wanting to enroll their children as early as possible in a school to allow both parents to work.

Appendix III. How Registration Will be Administered

This Appendix details how registration will be administered and the procedures that guide teachers in revising pupil status. It is proposed that these procedures be used as discussion points for the system, which if adopted, would define pupil status in the PPRS. The first two sections that follow are brief overviews of the process; the second two sections explain the process in greater detail.

1. Brief overview of the process

1.1 Initial registration into the Malawi Primary School Education system.

Initial Registration will take place during the school year and cover the whole pupil population in all schools in Malawi. It will be administered by mobile teams organized by MOEC and MANEB which will collect data from all pupils through filling in the Initial Registration Form. This form will provide base-line data about pupils so that counting by desired and multiple categories can take place.

1.2 In subsequent years updates of pupil variable data for each Standard by class.

Registration in Standards 2 and above will take place in the classroom with the teacher. Before the start of the school year, MANEB will send to school heads the class lists of pupils who should have been promoted from last year. Once the school heads assign the pupils to each Standard, the teachers will then modify the lists by identifying pupils in the class but not on the list and by noting those names on the list but who are not in their class. When a teacher is satisfied that his or her list accurately reflects the pupil composition in the classroom, the list is then forwarded to MANEB for entry into the computer. Registration is, thus, complete for the school year.

2. Detail of registration administration

2.1 Initial Registration into the Education System.

When parents first approach a school head to register their child, the school head fills in a form about the pupil in the presence of the parents. The school head asks for the pupil's birth certification and informs the parents that the name of the child is the one that will be used for the duration of his or her academic life in the Malawi Primary School system. It is recommended that name changes will not be permitted once the pupil's name is registered in the PPRS. Other data is taken about the pupil, such as district of origin, and the child's gender.

After the parent interview, the school head compiles a list of all the new entrants, Standard 1 pupils for the designated teacher. This temporary list becomes the class roster for the first two or three weeks of school. The teacher may add new pupils and cross out those who are consistently absent. Teachers may request that some pupils be removed because they are not ready for Standard 1 instruction. The Standard 1 teacher must also identify repeating pupils and indicate their status "R" as repeaters on the list. At the end of three weeks,

the Standard 1 teacher submits the permanent list of pupils to the school head. He or she makes a copy of the list with its changes and submits class lists from all the other Standards in the school to MANEB. The school head withholds the registration forms of those pupils who were too young for class this year and inscribes their names on the temporary list for the Standard 1 class in the next school year.

2.2 Subsequent Year Updates of pupil variable data in each Standard by class.

Teachers in Standards 2 through 8 must accomplish slightly different tasks to update their pupils' registration data. Over the school vacation MANEB has been preparing lists of promoted pupils. Lists sent to schools by MANEB in October/November contain data about pupils from the previous year. School heads and teachers receive lists of pupils who should now be in their standards assuming that all pupils are promoted from one standard to the next and that no pupils transfer out of or into the school. The task of teachers in the year after initial registration is to revise their Class Lists so that they match the existing sets of pupils in their standards.

When teachers receive Class Lists in a subsequent year, they will notice 3 things: (a) most pupils on the list should be in their standard, (b) there will be pupils on the list who are not in the classroom, and (c) there will be pupils in the standard who are not on the list.

- (a) Pupils who are on the list and found in the classroom are promoted from their Standard from last year. These are the success indicators of the school system, and their status is "P" in the promotion status and E in the movement status since those pupils were in the school last year.
- (b) Pupils who are on the list and not found in the standard can either be (i) transfers out, i.e., they left during the school holiday, (ii) not promoted, or (iii) drop-outs. Pupils who transfer out should have already obtained a Transfer Letter from the school head. The school head should inform teachers of pupils who have transferred to other schools. Their Movement and Promotion status is "O" for Transfer Out. If a pupil has not been promoted, he or she should be found in the standard below the present class (movement status E for having been registered at the current school last year). The teacher should verify if this pupil is there and whether the teacher in that Standard has registered the pupil as a repeater (R in the promotion status category). If the pupil cannot be found in the Standard below and no transfer out records exist, then the pupil is considered a drop out, or "D" in both Movement and Promotion status categories.

Pupils who are on the list and not in class can also be absent. However, the teacher will work with their class lists for a few weeks and follow up on pupils whose status is unclear. If a pupil is sick or absent for the first month of school, returning after registration has taken place, then the pupil is an exception and must be handled separately from the class or Standard List. The correction can be handled during the next year of registration or a letter of correction can be forwarded to MANEB indicating the appropriate status of the pupil. If there are, on average, 3 exceptions such as these per school and there are 2,600 schools in the country, data input personnel handling exceptions must count on a workload of 7,800 exceptions per year.

- (c) Pupils who are not on the list but are in the classroom fall into two situations: (i) they transfer in from another school, "I," within the Malawi school system or they can be a new entrant "N" coming from outside the Malawi school system, or (ii) they are repeaters in their current standard.
- (1) Whether pupils transfer from inside Malawi or outside, they must present documentation of standards (or grades) completed from the old school to the new school head. Only with this documentation can registration into the school and Primary School system take place. Their transfer status is, therefore, "I" for Transfer In in the Movement status and either P or R in the Promotion status category.
 - (2) The second situation is repeating pupils. Unless the teacher is new to the current Standard, he or she should recognize their pupils from the previous year as repeaters. The teacher should, however, verify with the teacher in the next Standard that pupils not promoted to their standard are, in fact, repeating. Those pupils who were incorrectly "promoted" to the next Standard can be stricken from that teacher's class list. Repeating pupils in the current Standard would be coded "R" for repeaters.

In most cases pupils who transfer to a new school will be promoted from the previous grade. It is possible, however, that a small number incoming transfers will be repeaters. The school head will assign the pupil to the standard recommended in the Transfer Letter. The current pupil status will be recorded along with the fact that they transferred into the school in the Class List.

When the school heads compile all the Class Lists from their teachers, they discuss exceptions and resolve hard-to-define cases. They may even send messengers into the village to determine the health or physical location of some pupils. Once the teachers are satisfied that their Class Lists match the actual pupil composition in their standards, the Class Lists are sent to MANEB through the headmaster or head teacher to the DEO for information processing. The procedures described above should take place about 3 weeks after the school year begins.

Teachers working with the Class Lists will, therefore, update the Movement and Promotion status of their pupils. The promotion status of pupils in the system will measure the internal efficiency and effectiveness of each standard for each gender by school in each district in each region. The movement status will be used to measure pupils who drop out of the system and those who migrate from one district to another.

Appendix IV Pupil Registration Number Alternatives

Background:

1992 Approximate number of primary school aged persons = 3,600,000

1992 Approximate number enrolled in primary schools = 1,560,000

A pupil can be given a number, e.g. 000001, 203762 or 1560000, but such a number is not particularly useful. It would be better if the pupil registration number is in itself informative.

The numbering system that is selected should take into account growth in the population, i.e. it should be structured in such a way that it does not have to be frequently modified because it is not capable of dealing with increases in student numbers. Thus, if we assume that the population doubles every 20 years, and the percentage of school age children attending school increases to 80%, then by 2012 AD, there will be about 7,200,000 primary school aged children, say, 8,000,000. Hence the approximate number of pupils per standard increases to 1,000,000. The analysis of alternative ways of arriving at a registration number is structured on this assumption.

Alternative 1:

1,000,000/365 = 2739 Average number of people born on the same day for every 1,000,000 pupils in grade on the assumption that enrolment in Std. 1 will be by age,

2739/2 = 1,370 Average number of births by day by gender,

1,370/28 = 49 Average number of births by day by gender by District of Origin.

000 Computer generated number by birth year, birthday, gender and District of Origin. Note: this number should be no greater than 50, but to be safe, three digits should be used.

Example: 72 202 1 22 092 The child was born on the 202nd day of 1972, is a boy, his district of origin is 22, he is the 92nd pupil with the identical first eight digits.

Advantages: 1: 4 unchanging items for subsequent analysis against changing data, and
2: the number is partially meaningful.

Disadvantages:
1: Day in year not in common use,
2: Each leap year causes a problem in that from February 29th onwards the day numbers do not correspond to the same dates in non-leap years,
3: length of ID is 11 digits.

Alternative 2:

- $1,000,000/4 = 250,000$ Average No. of people born in the same quarter of the year:
1 = 1st quarter = January February March
2 = 2nd quarter = April May June
3 = 3rd quarter = July August Sept.
4 = 4th quarter = October November Dec.
- $250,000/2 = 125,000$ Average number of people born in a quarter by gender
- $125,000/28 = 4464$ Average number of people born in a quarter by gender by District of Origin.
- 0000 Computer generated number by birth quarter, gender and District of Origin. Note: this number should not be greater than 9999.
- Example: 72 3 1 22 0992 This child was born in 1972 in the third quarter, is a boy, his district of origin is 22, and he is the 0992nd with the identical first six digits.
- Advantages: 1: The length of the ID is 10 digits; and
2: 4 items for analysis.
- Disadvantages:
1: Day and month of birth are not accessible.

Alternative 3:

- $1,000,000/12 = 83333$ Average number of people born in the same month,
- $83333/31 = 2688$ Average number of people born per month per day,
- $2688/2 = 1344$ Average number of people born per month per day by gender,
- $1344/28 = 48$ Average number of people born per month per day by gender by District of Origin.
- 000 Computer generated number by birth year, birth month, gender and District of Origin. Note: this number should be no greater than 50, but three digits should be used.
- Example: 84 12 30 08 2 001 This pupil was born in 1984, in December, on the 30th day, comes from the 8th District, is a girl and is the first person with this number.
- Advantages: 1: Meaningful to the teacher, school head, the DEO, REO and MOEC officials, and
2: can be sorted by the computer for year, gender, district of origin.
3: Includes the day of birth along with other pupil data

Disadvantages:

- 1: The number has 12 digits.

Alternative 4:

- 1,000,000/12 = 83333 Average number of people born in the same month,
83333/2 = 41666 Average number of people born per month by gender,
41666/28 = 1485 Average number of people born per month per day by gender
by District of Origin.
0000 Computer generated number to cover persons with the same
first seven digits in common.

Example: 84 12 08 2 0001 This pupil was born in 1984, in December, comes from
the 8th District, is a girl and is the first person
with this number.

- Advantages:
- 1: Meaningful to the teacher, school head, the DEO, REO and MOEC officials, and
 - 2: Can be sorted by the computer for year, gender, district of origin.
 - 3: This number is shorter to read for important data.

Disadvantages:

- 1: The number does not include the birth day of the pupil.

APPENDIX V: Details of the implementation process

1. Define Data Elements of PPRS		Begin	End
		1992	
A.	Design registration forms (Optical Mark Reader & manual entry forms) and instruction protocol	01/6	30/6
B.	Field-test the forms/protocol and revise	15/6	30/6
C.	MOEC begins preparation of list of schools and school numbers	30/6	31/7
D.	MOEC designs plan to train PPRS to: 1. REOs 2. DEOs 3. Head Teachers 4. Teachers	30/6	15/7
E.	Field-test forms again and revise	30/6	15/7
F.	MOEC trains: 1. REOs, 2. DEOs, 3. Head Teachers and 4. teachers in PPRS	15/7	30/10
G.	MOEC decides on method of entry		15/7
H.	If OMR forms are to be used, MANEB orders OMR forms		15/7
I.	MOEC provides MANEB with list of schools and school numbers		1/8
J.	If manual forms are to be used, MANEB prints manual forms	1/8	1/9
K.	MANEB checks on progress of OMR forms	1/8	30/8
L.	MANEB receives OMR forms		5/9
M.	If OMR forms are delayed and cannot be used MANEB prints manual entry forms	6/9	9/10

II. Collect the Data from Pupils

A.	MOEC and MANEB prepare and sign papers specifying MOEC and MANEB's responsibilities in regard to PPRS	1/7	15/7
B.	MANEB and MOEC prepare plans for: <ol style="list-style-type: none"> 1. Hiring survey teams 2. Hiring/designating field staff 3. Locating vehicles 4. Training staff 5. Collecting data (registrations) 	1/7	15/7
C.	MOEC decides dates for registration		14/8
D.	MANEB makes logistical arrangements for survey team, vehicles, survey team training, maps		15/8
E.	MANEB trains survey teams	1/10	3/10
F.	MANEB carries out registration	15/10	30/11

III. Data Processing

A.	MOEC and MANEB receive training in Oracle Software	15/7	30/7
B.	MOEC (re)defines report requirements		15/1
C.	Create a "test" database using the OMR input forms with trial data	15/7	30/7
D.	MANEB and MOEC organize database: <ol style="list-style-type: none"> 1) fields 2) data entry screens 3) report production menus and templates 4) documentation 	15/7	30/7
E.	MANEB defines and organizes the work flow for data input: <ol style="list-style-type: none"> 1) unpacking the forms 2) sorting the forms for damaged and undamaged 3) feeding the forms to the OMR 4) training data input personnel 5) manual inputting 15% of the forms 	1/9 01/10 17/10	15/9 08/10 30/11

		1993	
F.	MANEB produces MOEC requested reports	01/03	31/05
G.	MANEB produces the Class Lists for 1993-94 school year	01/09	30/9
H.	MANEB dispatches the 1993-94 class lists	01/10	

APPENDIX VI. Estimated costs of the registration plan, 1992-93 to 1995-96.

SUB-ITEM	SUB-ITEM DESCRIPTION	1992-93*	1993-94	1994-95	1995-96	TOTALS
001	Salaries:					
	Database Supervisor	12,895	8,597	8,597	8,597	38,684
	Database Manager	10,195	13,593	13,593	13,593	50,974
	Regist Coordinator	7,500	5,000	5,000	5,000	22,500
	Field Staff	52,308	0	0	0	52,308
002	Casual Labor					
	Data Processing I	63,000	38,500	40,250	42,000	183,750
	Data Processing II	9,170	24,198	26,048	27,723	87,139
	Drivers	18,462	0	0	0	
007	Consumable Stores	750	1,000	1,000	1,000	3,750
116	Fuel & Lubricants:					
	Data Collection	111,002	0	0	0	111,002
	Other	5,000	7,000	7,000	7,000	26,000
123	Internal training:					
	MOEC DEO training	5,000	5,000	5,000	5,000	20,000
	Database training	75,000	3,000	5,000	3,000	86,000
146	Stationery:					
	Alt I Stationery	8,000	9,170	9,930	10,535	37,636
	Alt II Stationery	85,315	36,734	37,542	38,184	197,776
	PPRS Instructions	26,200	27,500	28,900	30,500	113,100
147	Subsistence Allowance:					
	Data Collection:					
	Drivers	33,948	0	0	0	33,948
	Field Staff	112,914	0	0	0	112,914
	Supervisors	4,600	0	0	0	4,600
	Section Heads	3,150	0	0	0	3,150
	School Heads	0	11,400	11,400	11,400	34,200
148	Telephone charges	3,750	5,000	5,000	5,000	18,750
150	CPU Charge	5,824	6,507	7,026	7,439	26,797
Total With Alt I		559,496	141,267	147,696	150,064	980,062
Total With Alt II		582,982	154,529	161,106	163,436	1,043,591
Difference		23,485	13,263	13,409	13,372	63,529

* 01.07.92 to 31.03.93

NOTE: all prices as of 1 June, 1992

NOTES TO APPENDIX VI

General Comments:

The above costings are calculated to show initiation and on-going operations of the PPRS beginning July 1992 and ending 31 March 1996. All prices are as of 1 June 1992. The costing shows two options: one assumes a manual operation to enter pupil data into the Registration system and the second assumes the use of an Optical Mark Reader (OMR). The OMR device is estimated to reduce the time it takes to manually enter data into the system.

The costs reflect 3 major activities to launch PPRS: (1) designing and producing the data entry forms and registration procedures, (2) collecting the data with field staff from MOEC and MANEB, and (3) setting up the software to enter the data and produce statistical reports. There are differences in personnel and material costs depending on how data is entered into the computer.

The purpose of this financial plan is to estimate the costs associated with PPRS activities. The figures are presented to assist MOEC and MANEB apportion and incorporate these costs into their own budgets.

The costs are also based on a projected pupil enrolment over the 4 year life of the project. Estimated first year enrolments in year 2, 3 and 4 are 600,000 pupils. The promotion rate from one year to the next is 80 percent.

Estimated Pupil Population During GABLE Project

Yr	Standards								Total
	1	2	3	4	5	6	7	8	
92-93	460278	322075	301321	199410	150874	115254	89602	67494	1706308
93-94	600000	368223	257660	241057	159528	120699	92204	107522	1946892
94-95	600000	480000	294578	206128	192845	127622	96559	110644	2108377
95-96	600000	480000	384000	235663	164903	154276	102098	115871	2236810

001 Salaries:

A. Database Supervisor: Located at MANEB the Supervisor is responsible for executing the MANEB component of PPRS. The level of this position is estimated to be K34,386 per annum, but is calculated on a half-time basis for the first nine months and on a quarter-time basis for every year thereafter.

B. Database Manager: Located at MANEB this person's duties will be to set up and maintain the database, be responsible for producing standard and ad hoc statistical reports, and for producing the annual Class Lists used for updating registration in future years. Costed at K27,186 per annum, this salary is calculated for the first nine months on a half-time basis (K10,195) and, thereafter also on a half-time basis (K13,593). Both the Database Supervisor and the Database Manager's duties will be carried out by personnel already in place.

C. Registration Coordinator: Located in the Central Planning Unit of MOEC, this person will set in motion the annual PPRS and coordinate with MANEB in the organization of the data collection teams. Duties will consist of coordination and timing of registration activities between Headquarters and Regional and District Educational Offices; liaison with MANEB on the flow of forms and statistical reports between the two offices; periodic training; preparation of the coordination budget, and oversight of operational agreements between MOEC and MANEB. The Registration Coordinator is costed on the basis K15,000 per annum and calculated at two-thirds time for the first nine months (K7500) and one-third time thereafter (K5000). These duties are expected to be absorbed within the existing personnel in MOEC.

Field Staff:

MOEC and MANEB will allocate staff time to collect the registration data over 8 weeks in October and November, 1992. 34 staff people are expected to participate in the activity. At an average annual salary of K10,000 this works out to:

$$34 \text{ Staff} \times (8/52 \times 10,000) = \text{K}52,308$$

002 Data Processing, Alternative I, Manual Data Entry:

A. 1992-93 National Registration. MANEB estimates that for Standards 6, 7 and 8, completing data entry will take 20 people one month to enter one standard of pupils. On this basis it is estimated to take 9 months to enter all 8 standards. At K300 per month \times 20 people \times 9 months = K54,000. One data entry supervisor should also be included at K1,000 per month = K9,000, totalling K63,000.

B. Subsequent initial registration and updates. Manual entry is estimated at 2 months \times 20 people for Std 1 or K12,000. Updating pupil status for Standards 2 to 8 is estimated to take one-half a month per standard. 7 standards, therefore, will take 3.5 months using 20 data entry technicians:

Standard 1 entry:	2	\times 20 \times K300 =	K12,000
Standards 2 to 8 entry:	3.5	\times 20 \times K300 =	K21,000
One data entry supervisor:	K1000/month	=	K 5,500
TOTAL =			K38,500

This total is expected to increase each subsequent year with pupil enrolment increases.

Data Processing, Alternative II, Optical Mark Reader Entry:

A. 1992-93 National Registration. Using an Optical Mark Reader (OMR), all pupil data from all standards will be read into the computer from the Initial Registration Forms. MANEB estimates that 68,000 forms can be read in daily with the device. Given 1,700,000 pupils, inputting the data is estimated to take 25 person-days at K50 per day.

However, because some forms may not be in readable condition when they arrive at MANEB, it is anticipated that the unreadable forms will have to be identified and entered manually. A Clerk will unpack, check and sort the readable forms and the Data Entry Supervisor will delegate unreadable forms to data input personnel. If 15 percent of the forms (255,000 forms) are damaged and unreadable by the OMR, it will take 26 days to key in the damaged forms. It is estimated that 1 clerk should be engaged for 10 person days ($10 \times K12 = K120$), and that 20 Data Entry personnel be engaged for 26 days ($20 \times 26 \times K15 = K7,800$). The combined work is estimated to cost K9,170.

B. Subsequent initial registration and updates.

1. Standard 1. With 600,000 Standard 1 pupils enrolling each year, their Initial Registration forms will be read into the computer using OMR at a rate of 68,000 forms per day. If it takes 9 days to process these forms, then $K50 \text{ per day} \times 9 \text{ days} = K450$ for entering Standard 1 pupils. But accounting for 15 percent form error (i.e. 90,000 forms) it will take 9 days for 20 data entry personnel to enter the forms.

1 Clerk (90,000 forms)	= 4 days X K12	= K 48
20 data entry personnel	= 9 days X K15	= K2,700
1 OMR technician (data entry supervisor)		= K 450
		Total = K3,198.

2. Standards 2 to 8. Updating Standards 2 to 8 using the manual method with the Class List forms is calculated as above: 7 standards will take 3.5 months using 20 data entry technicians: $3.5 \times 20 \times K300 = K21,000$.

3. The total for 1993-94 initial registration and updates is K3,186 from above, plus K21,000 = K24,186 with increases each subsequent year as enrolment increases.

C. Drivers

MOEC MANEB will allocate drivers to collect the registration data over 8 weeks in October and November, 1992. 12 people are expected to participate in the activity. At an average annual salary of K10,000 this works out to:

$12 \text{ Drivers} \times (8/52 \times K10,000) = K18,462$

116 Fuel and Lubricants:

Data collection for the 1992-93 National Registration will be carried out by field staff from MOEC and MANEB. Their transportation costs are based on 12 rented cars and 41 days to collect the Initial Registration forms from all one to eight standards (these costs are derived from the MANEB plan to collect data for Standards 1 to 5: Ref. C1/6/1/II/114, Para 6.a, p.2, dated 20 March 1992).

Rental, PVHO vehicle rate:12 X K115 X 41 days =	K 56,580
Insurance at 12 X K35 X 41	= K 17,220
Per kilometer charge	= K 32,120
Fuel	= K 5,082

Total = K 111,002

123 Internal Training:

A. Registration Training for the Registration Protocol. Objective of training: to inform staff about (1) the purpose of PPRS, (2) the new rules and procedures of Registration, (3) submission dates and delivery of forms to and from MANEB, i.e., Initial Year Registration and Subsequent Year pupil status updating, and (4) instructions on the procedures to conduct registration. Training will be given by MOEC Planning Section staff to Headquarters and REO and DEO staff. This training will be built into planned workshops and seminars. Costs for these activities are expected to be low.

B. MANEB and MOEC Staff are to receive training in database design and management with ORACLE software. The objective is to make sure that the database supervisor, database manager and computer staff from MOEC are able to (1) set up the database, (2) understand its capabilities, (3) use its programming language to construct data-input screens and produce new and routine statistical reports, (4) maintain the database and (5) systematically document and update the database procedures so that personnel transitions can take place without a loss of capability. The training will be provided by an expert in ORACLE software. It is expected that three to four weeks time should be devoted to this training. An estimated cost of MK75,000 includes air fare from U.S. or Europe, lodging, per diem, salary and contingency. Training in subsequent years will be needed but will be minimal.

146 Stationery: Alternative I, Manual Data Entry:

In the first and in later years of registration, manual entry would take place with teachers filling in or updating pupil data on computer generated forms looking like blank Class Lists. Processing 1,700,000 pupils on these class lists at the Initial Registration is estimated to consume 68,000 sheets of triplicate paper (25 pupils to a page) at 10 tambala per page. Estimating these forms needs to account for waste, damage and the fact that some class list forms will not contain the full 25 pupil entries. It is estimated that 80,000 sheets will be needed at a cost of K8,000 in the first year, with increases in subsequent years.

Stationery: Alternative II, Optical Mark Reader:

A. 1992-93 National Registration: 1.7 million pupils X 5 tambala = K85,315 + 10% wastage = K93,847.

B. Subsequent initial registration and updates: 600,000 Standard 1 pupils at 5 tambala per OMR form = K30,000, plus Class List Sheets for 1,100,000 pupils (52,000 sheets at 10 tambala per sheet) = K5200. The OMR forms for new entrants plus the Class List sheets will cost K36,743 and will increase as total enrolments increase over time.

Stationery: PPRS Instructions

In addition to the forms to be printed for registration, there are instructions that must accompany the Registration forms when they are delivered to the schools. A registration protocol will be written to instruct teachers, school heads, Inspectors, and other District Education officials about how to conduct registration for new entrants and for continuing pupils. The following table estimates the numbers of teachers in the education system over the project years. The teachers were estimated on the output of current teacher training institutions, MASTERP and the exit of 500 teachers per year for retirement and other reasons.

Years	Teachers	MOEC Staff	Kwacha
1992-93	25,700	500	26,200
1993-94	27,000	500	27,500
1994-95	28,400	500	28,900
1995-96	30,000	500	30,500

If the instructions are produced at a cost of 1 Kwacha a piece, then the amount will equal in Kwacha the quantity of teachers plus extra for 500 MOEC officials.

147 Subsistence Allowance:

A. Data Collection.

MOEC and MANEB drivers at K69 per night, Field Staff at K81 per night and Field Staff Supervisors at K93 per night and Section Heads at K105 per night, will receive subsistence allowance while they are in the field collecting data in October-November. Information about rates for each of these personnel categories was obtained from MANEB, and was re-calculated for 41 days.

Position	Rate	Days	Total
12 Drivers	K 69	41	K 33,948
34 Field Staff	K 81	41	K 112,914
5 Supervisors	K 93	10	K 4,650
3 Section Heads	K 105	10	K 3,150

School heads: Where schools are inaccessible, the head master or teacher will have to travel to the nearest zone center and will receive a travel allowance: K57 X 200 = K11,400.

150 Computer Use Charge:

It should be noted that CPU time is quite different from time spent at a computer terminal writing programs or working with software. CPU time handles thousands of instructions per second and is measured during programs requiring intense processing or processing in batches. While it may take several months to set up a functioning application with the software, actual CPU time devoted for this task is often limited. For processing data MANEB charges its clients K0.0125 for each second of central processing unit (CPU) computer time or K45 per hour.

With 1,000,000 pupils and 50 bytes of information for each pupil, the required database storage is estimated to be 85 megabytes. In the first year of PPRS operation CPU time is required (1) to set up the database program, (2) to input the data using either the OMR or by manual methods, (3) to maintain the database, and (4) to produce reports from the database of which there will be two kinds: a) MOEC statistical reports and b) Class Lists for all classroom teachers. Each of these computer operations takes up CPU time and will bear costs. These are:

CPU Function	Cost Basis	Yr 1	Yr 2	Yr 3	Yr 4
Initial Set Up	2 Hrs X K45	K90	0	0	0
Manual or OMR Input	1/4 sec. CPU time for each pupil: 1.7 m X K0.0125	K5,332	K6,084	K6,589	K6,990
Maintenance	15 min per month or K11.5 X 12	K135	K135	K135	K135
Report Production	100 MOEC statistical reports at K1.125/report	K113	K113	K113	K113
Class Lists	Processing costs for Class Lists at K.0125 per list	K151	K173	K187	K199
Totals		K5,824	K6,597	K7,116	K7,529

Appendix VII: Summary of registration data elements

(1) Fixed Data Elements:

Year of Birth	Month of Birth	District of Origin	Gender	Computer Generated Number	Surname	Other Names	Date of Initial Enrolment	Disability Code
87	01	01	1 = boy	0001 to	15 Charact	15 Charact	84	1
86	02	..	2 = girl	9999			85	2
85	03	..					86	3
84	04	28					87	4
83	05	96					88	5
82	06	97					89	6
81	07	98					90	7
80	08	99					91	8
79	09						92	9
78	10							
	11							
	12							

(2) Variable Data Elements:

School ID	Current Std.	Pupil Status	
		Movement Status	Promotion Status
0001 to	1	N= New Entrant	N= New Entrant
3000	2	E= Continuing	P= Promote
	3	I= Transfer In	R= Repeat
	4	O= Transfer Out	O= Transfer Out
	5	D= Dropout	D= Dropout
	6		
	7		
	8		

School ID number refers to another table in the database which has school characteristics associated with it. It will, therefore, be possible to conduct repetition on type of school in each region, district or school in the country.

MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

NOTES:

This schedule of activities is organized chronologically, by year and by week. The dates represent the week or weeks in which a particular activity is scheduled to take place.

The schedule of activities depends on the method of entry the MOEC decides to use: OMR or manual entry. There are three scenarios or sequences of events:

1. OMR forms are ordered and arrive on time
2. OMR forms are ordered but are delayed. The emergency plan goes into effect.
3. Manual forms are used.

To distinguish these different scenarios, the words "If OMR," "If Emergency," and "If Manual Entry" are used to head particular activities belonging to a particular sequence.

1992

	ACTIVITY	RESPONSIBLE	WEEK(S) BEGINNING:
1.	Develop draft registration forms (OMR, manual), instructions	MOEC	15/6 - 29/6
2.	Request DEOs for list of school names, enrolments	MOEC	15/6
3.	Prepare list of school names, permanent school numbers, enrolment by school; advise MANEB	MOEC	15/6 - 27/7
4.	Field test forms, instructions	MANEB	29/6 - 6/7
5.	Revise forms, instructions for 2nd field-testing	MANEB/MOEC	29/6 - 6/7
6.	Obtain costs estimates, requirements for OMR forms	MANEB	29/6 - 6/7
7.	Negotiate contract with OMR supplier, specifying delivery in Zomba by certain date or cancellation of order	MOEC	29/6 - 6/7
8.	Negotiate portion of ORACLE training to be covered by GABLE	MOEC/MANEB	29/6 - 6/7

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1992

	ACTIVITY	RESPONSIBLE	WEEK(S) BEGINNING:
9.	Decide OMR or manual entry forms; inform MANEB	MOEC	13/7
10.	Decide "as of" date for registration and how & when registration forms to be delivered to schools; inform MANEB	MOEC	13/7
11.	If OMR: Order OMR form (& pencils if necessary)	MANEB	13/7
12.	If OMR: Arrange to print teachers' instructions	MANEB	13/7
13.	If Manual Entry: Order paper for manual registration forms	MANEB	13/7 - 20/7
14.	Specify training needs for MOEC, MANEB officials, REO's, DEO's, teachers, headteachers	MOEC	27/7
15.	Draft 1993/94 registration update forms & instructions	MOEC	27/7
16.	Advise MANEB of database/data requirements	MOEC	27/7
17.	Develop sample data to test database	MOEC	27/7
18.	Prepare logistical plan for hiring data collection team, locating vehicles, training data collection team; submit to MOEC for review	MANEB	27/7 - 3/8

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1992

ACTIVITY		RESPONSIBLE	WEEK(S)	BEGINNING:
19.	2nd field test of forms, instructions	MANEB	3/8	
20.	Final revision of forms, instructions	MOEC/MANEB	3/8 - 10/8	
21.	If Manual Entry: Provide MOEC with sample forms for training	MANEB	3/8	
22.	Arrange ORACLE training or decide to learn on own	MOEC/MANEB	3/8 - 30/8	
23.	Develop training plan & schedule	MOEC	3/8 - 10/8	
24.	Undergo ORACLE training or learn on own	MANEB	3/8 - 30/8	
25.	Review MANEB's proposed logistical plan for registration	MOEC	3/8	
26.	Prepare database fields, data entry screens, report production menus & templates, documentation	MANEB	10/8 - 30/9	
27.	Carry out training of school system personnel	MOEC	10/8 - 30/9	
28.	If OMR: Obtain sample OMR forms & print manual forms for training; field test both sets of instructions	MANEB	10/8	
29.	Revise instructions as necessary	MANEB	10/8	
30.	If OMR: Check if OMR forms will be on time; if not, advise MOEC to cancel order & proceed to Emergency Plan	MANEB	10/8	
31.	If Emergency Plan: Order paper for manual registration forms	MANEB	10/8 - 17/8	
32.	If Emergency Plan: Print manual registration forms	MANEB	24/8 - 14/9	

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1992

ACTIVITY		RESPONSIBLE	WEEK(S) BEGINNING:
33.	Prepare "test" database using sample data; provide sample reports to MOEC (refer to 14)	MANEB	24/8 - 31/8
34.	Review sample reports; advise MANEB of changes needed	MOEC	7/9
35.	Make changes as necessary in report format	MANEB	14/9
36.	If Emergency Plan: Arrange to print teacher instructions	MANEB	24/8
37.	If Manual Entry: Print manual registration forms	MANEB	31/8 - 21/9
38.	If Manual Entry: Arrange to print instructions	MANEB	7/9
39.	Make logistical arrangements for data collection team, vehicles, data collection team training, maps	MANEB	7/9 - 21/9
40.	If Manual Entry: Assemble packets for data collection teams	MANEB	21/9 - 28/9
41.	If Emergency Plan: Assemble packets for data collection teams	MANEB	21/9 - 28/9
42.	If OMR: Receive OMR forms	MANEB	19/10
43.	If OMR: Assemble packets for data collection teams	MANEB	19/10 - 26/10
44.	Train data collection teams, data entry clerks	MANEB	19/10 - 26/10
45.	Survey teams register pupils	MANEB	2/11 - 30/11

* We do not know how long data entry will take.

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1993

ACTIVITY		RESPONSIBLE	WEEK(S) BEGINNING:
46.	Enter registration data*	MANEB	9/11 - 31/12
47.	Evaluate 1992/93 registration	MOEC/MANEB	1/1 - 14/1
48.	Revise 1992/93 registration & update forms & instructions for 1993/94 registration	MOEC/MANEB	1/1 - 14/1
49.	Produce statistical reports based on 1992/93 registration**	MANEB	1/1 - 1/2
50.	Negotiate agreement between MOEC and MANEB for 1993/94 registration	MOEC/MANEB	1/1 - 1/2
51.	Obtain price & purchase requirements for OMR forms for 1993/94 registration	MANEB	1/1 - 14/1
52.	Print & send class lists with pupil registration numbers to schools, based on 1992/93 registration**	MANEB	1/1 - 1/2
53.	Decide OMR or manual entry forms for 1993/94 initial registration	MOEC	21/1
54.	Field-test revised forms & instructions (initial registration & update) for 1993/94 registration	MANEB	21/1 - 15/2
55.	If OMR to be used for 1993/94 initial registration, order OMR forms	MANEB	15/2 - 15/6
56.	Devise plan for training school personnel for 1993/94 registration	MOEC	15/2 - 15/3
57.	Train school personnel for 1993/94 registration	MOEC	15/3 - 31/7
58.	If manual entry forms to be used for 1993/94 initial registration, print initial registration forms	MANEB	1/8 - 15/8
59.	Print update forms for 1993/94 registration	MANEB	1/8 - 15/8

** Timing of this activity depends on time required to input data.

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1993

ACTIVITY	RESPONSIBLE	WEEK(S) BEGINNING:
60. Print instructions for 1993/94 registration	MANEB	1/8 - 15/8
61. Assemble registration packets for 1993/94 registration	MANEB	15/8 - 1/9
62. Mail forms (initial registration & update) & instructions to schools for 1993/94 registration	MANEB	1/9
63. Pupil registration 1993/94	MANEB	1/11 - 30/11
64. Enter 1993/94 data	MANEB	15/11 - 31/12

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1994

ACTIVITY		RESPONSIBLE	WEEK(S) BEGINNING:
65.	Evaluate 1993/94 registration	MOEC/MANEB	1/1 - 14/1
66.	Revise 1993/94 registration & update forms & instructions for 1994/95 registration	MOEC/MANEB	1/1 - 14/1
67.	Negotiate agreement between MOEC and MANEB for 1994/95 registration	MOEC/MANEB	1/1 - 1/2
68.	Obtain price & purchase requirements for UMR forms for 1994/95 registration	MANEB	1/1 - 14/1
69.	Print & send class lists with pupil numbers to schools, based on 1993/94 registration**	MANEB	1/1 - 1/2
70.	Decide UMR or manual entry forms for 1994/95 initial registration	MOEC	21/1
71.	Field-test revised forms & instructions (initial registration & update) for 1994/95 registration	MANEB	21/1 - 15/2
72.	Evaluate repetition policies	MOEC	1/3 - 1/5
73.	If UMR to be used for 1994/95 initial registration, order UMR forms	MANEB	15/2 - 15/6
74.	Devise plan for training school personnel for 1994/95 registration	MOEC	15/2 - 15/3
75.	Train school personnel for 1994/95 registration	MOEC	15/3 - 31/7
76.	If manual entry forms to be used for 1994/95 initial registration, print initial registration forms	MANEB	1/8 - 15/8
77.	Print update forms for 1994/95 registration	MANEB	1/8 - 15/8

** Timing of this activity depends on time required to input data.

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1994

	ACTIVITY	RESPONSIBLE	WEEK(S) BEGINNING:
78.	Print instructions for 1994/95 registration	MANEB	1/8 - 15/8
79.	Assemble registration packets for 1994/95 registration	MANEB	15/8 - 1/9
80.	Mall forms (initial registration & update) & instructions to schools for 1994/95 registration	MANEB	1/9
81.	Pupil registration 1994/95	MANEB	1/11 - 30/11
82.	Enter 1994/95 data	MANEB	15/11 - 31/12

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1995

ACTIVITY		RESPONSIBLE	WEEK(S) BEGINNING:
83.	Evaluate 1994/95 registration	MOEC/MANEB	1/1 - 14/1
84.	Revise 1994/95 registration & update forms & instructions for 1995/96 registration	MOEC/MANEB	1/1 - 14/1
85.	Produce statistical reports based on 1994/95 registration**	MANEB	1/1 - 1/2
86.	Negotiate agreement between MOEC and MANEB for 1995/96 registration	MOEC/MANEB	1/1 - 1/2
87.	Obtain price & purchase requirements for OMR forms for 1995/96 registration	MANEB	1/1 - 14/1
88.	Print & send class lists with pupil numbers to schools, based on 1994/95 registration**	MANEB	1/1 - 1/2
89.	Decide OMR or manual entry forms for 1995/96 initial registration	MOEC	21/1
90.	Field-test revised forms & instructions (initial registration & update) for 1995/96 registration	MANEB	21/1 - 15/2
91.	If OMR to be used for 1995/96 initial registration, order OMR forms	MANEB	15/2 - 15/6
92.	Devise plan for training school personnel for 1995/96 registration	MOEC	15/2 - 15/3
93.	Train school personnel for 1995/96 registration	MOEC	15/3 - 31/7
94.	If manual entry forms to be used for 1995/96 initial registration, print initial registration forms	MANEB	1/8 - 15/8
95.	Print update forms for 1995/96 registration	MANEB	1/8 - 15/8

** Timing of this activity depends on time required to input data.

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1995

ACTIVITY	RESPONSIBLE	WEEK(S) BEGINNING:
96. Print instructions for 1995/96 registration	MANEB	1/8 - 15/8
97. Assemble registration packets for 1995/96 registration	MANEB	15/8 - 1/9
98. Mail forms (initial registration & update) & instructions to schools for 1995/96 registration	MANEB	1/9
99. Pupil registration 1995/96	MANEB	1/11 - 30/11
100. Enter 1995/96 data	MANEB	15/11 - 31/12

MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1996

ACTIVITY		RESPONSIBLE	WEEK(S) BEGINNING:
101.	Evaluate 1995/96 registration	MOEC/MANEB	1/1 - 14/1
102.	Revise 1995/96 registration & update forms & instructions for 1996/97 registration	MOEC/MANEB	1/1 - 14/1
103.	Produce statistical reports based on 1995/96 registration**	MANEB	1/1 - 1/2
104.	Negotiate agreement between MOEC and MANEB for 1996/97 registration	MOEC/MANEB	1/1 - 1/2
105.	Obtain price & purchase requirements for OMR forms for 1996/97 registration	MANEB	1/1 - 14/1
106.	Print & send class lists with pupil numbers to schools, based on 1995/96 registration**	MANEB	1/1 - 1/2
107.	Decide OMR or manual entry forms for 1996/97 initial registration	MOEC	21/1
108.	Field-test revised forms & instructions (initial registration & update) for 1996/97 registration	MANEB	21/1 - 15/2
109.	If OMR to be used for 1996/97 initial registration, order OMR forms	MANEB	15/2 - 15/6
110.	Devise plan for training school personnel for 1996/97 registration	MOEC	15/2 - 15/3
111.	Train school personnel for 1996/97 registration	MOEC	15/3 - 31/7
112.	If manual entry forms to be used for 1996/97 initial registration, print initial registration forms	MANEB	1/8 - 15/8
113.	Print update forms for 1996/97 registration	MANEB	1/8 - 15/8

** Timing of this activity depends on time required to input data.

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MASTER LIST OF ACTIVITIES - PRIMARY PUPIL REGISTRATION SYSTEM

1996

ACTIVITY	RESPONSIBLE	WEEK(S) BEGINNING:
114. Print instructions for 1996/97 registration	MANEB	1/8 - 15/8
115. Assemble registration packets for 1996/97 registration	MANEB	15/8 - 1/9
116. Mail forms (initial registration & update) & instructions to schools for 1996/97 registration	MANEB	1/9
117. Pupil registration 1996/97	MANEB	1/11 - 30/11
118. Enter 1996/97 data	MANEB	15/11 - 31/12

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24/2/82

TEACHER TRAINING COLLEGES: BOARDING STUDENTS

1. Blantyre, Lilongwe and Mzuzu Teacher Training Colleges (TTCs) each have a boarding capacity of 540 students, giving a total of 1,620 students.
2. Every year approximately 270 places are offered in each college for first year students.
3. However, every year some students do not take up their offers while others start the college year but drop out, mostly, it seems, by the end of the first term. Additionally, throughout the two years of the course some students become pregnant.
4. The consequence of this is that for each intake of 270 students it appears that some 25 to 30, i.e. approximately 10%, do not complete the course.
5. An over enrolment of first year students could result in closer to the desired annual 270 graduates.
6. It appears that already sometimes the number of offers is 270 plus those spaces unoccupied by second year students. Thus if there are only 243 second year students then the first year offers will be 297 (i.e. $270 - 243 = 27 + 270 = 297$). However, with a loss of 10% this means that only 268 graduate, rather than 270. A pattern that could evolve, showing the presumed loss of students from the start to the end of each TTC year, is as follows:

Students	Year 1	Year 2	Year 3	Year 4	Year 5
1st Yr	270-->243	297-->267	273-->246	294-->265	275-->248
2nd Yr		243-->243	267-->267	246-->246	265-->265
TOTAL in TTC					
at start of year	540	540	540	540	540

This still would not result in 270 graduates per year.

7. If the estimate of the loss rate, occurring as it does mostly in the first term of the first year, is accurate at about 10%, then it would seem that the first year intake should always be about 300 students. A 10% loss rate would then leave 270 students. The resultant pattern would then be as follows.

Students	Year 1	Year 2	Year 3	Year 4	Year 5
1st Yr	300-->270	300-->270	300-->270	300-->270	300-->270
2nd Yr		270-->270	270-->270	270-->270	270-->270
TOTAL in TTC					
at start of year	570	570	570	570	570

Note that as the loss rate changed so the Year 1 intake would be varied: if the loss rate decreased then the Year 1 intake would decrease and if the loss rate increased then the Year 1 intake would increase.

8. With an intake structured as in Paragraph (7) (1) all students start at the same time (thus eliminating the present practice of having another intake of a varying size in January), (2) there will be the usual nine classes (but of 33 students each) which will gradually reduce in size to the desired 30 (which is the basis of the organization of the TTCs), and (3) there would be a good chance of there being about 270 graduates per year.
9. There are two major consequences for the TTCs
 - 9.1 Additional boarding space for the 30 students will have to be found. Five solutions are possible:
 - (1) the college can be supplied with beds and mattresses so that the students can be "bedded" in one or more classrooms or others spaces (This practice, which already exists, is not considered satisfactory);
 - (2) double bunks can be supplied (for thirty students) which can be dismantled as students leave, leaving single beds;
 - (3) the extra students could be day students until beds become available in the boarding areas;
 - (4) off campus "hostel" facilities can be hired or provided until such time as the students can move to occupy the spaces that are vacated in the boarding areas; and
 - (5) temporary accommodation can be supplied at the TTCs, this being gradually dismantled as the need for it diminishes.
 - 9.2 Having extra students for a short time means slight increases in costs, e.g. in the food bill, in stationery supplies, in supplies in the practical subjects, for off campus boarding and, if the students are off campus, for transport to and from the TTCs.
10. Having an extra 30 students means that each TTC will not require additional teaching staff as the teaching/students ratios (at about 1:18) are still below the MOEC figure of 1:21.

TTCRDG